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| EXAMINER |
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TAYLOR, BARRY W

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| ART UNIT | PAPER NUMBER |
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2617

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS                               | 03/02/2007 | PAPER         |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/780,633

Applicant(s)

NILSSON, JOHAN

Examiner

Barry W. Taylor

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 7/9/04 4/11/05 5/22/06
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities.

All co-pending applications must be identified by their application number(s).

See paragraph 0001 of the specification.

Appropriate correction is required.

### ***Drawings***

2. Figures 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

See "BACKGROUND" of specification, paragraphs 0002 – 0054.

### ***Claim Rejections - 35 USC § 112***

3. The Examiner is unable to determine from the originally filed specification as to how one of ordinary skill in the art would be able to make and use the invention. The specification provides no basis for the claimed subject matter. Specifically, as by way of example, claims 14-21, 35-42 and 47 appear to be directed towards HS-SCCH Part I

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having a reduced set of possible codewords is generated from a full set of possible code words.

In contrast, a text search of the specification discloses that a reduce set is generated from full set wherein reduced set is defined as something meaningful (paragraph 0063). A further search of the specification for the terms "something meaningful" only appears in paragraphs 0011-0013 which appears to be either 16-QAM or QPSK. Another example, a text search of : "selecting as a decoded value that one of the reduced set of possible codewords that is associated with a highest one of the correlation values, wherein the reduced set of possible codewords is generated from the full set of possible codewords.", as recited in independent claims 19, 40 and 47, cannot be found anywhere in Applicants specification. The argument holds true for dependent claims 14-18, 20-21, 35-39, and 41-21.

Therefore the Examiner is interpreting the independent claim language as decoding a HS-SSCH Part I message by using a full set of possible codewords (i.e. UE capable of operating in two different modes: 16-QAM mode or QPSK mode).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 19-21, 40-42 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants Admitted Prior Art (hereinafter AAPA, see "BACKGROUND", paragraphs 0002 – 0054 and figures 1-4).

Regarding claim 40. The following rejection is being made as best understood by the Examiner due to the 112 first rejection listed above.

AAPA teaches an apparatus (UE) that decodes a High Speed Shared Control Channel Part 1 (HS- SCCH Part 1) message in a High Speed Downlink Packet Access (HSDPA) system that includes a full set of possible codewords (see AAPA figures 1-4), the apparatus comprising:

logic that receives the HS-SCCH Part 1 message (see figure 2 wherein UE receives HS-SCCH Part 1 message and correlates in block 209);

logic that generates a set of correlation values by correlating each of a reduced set of possible codewords against the received HS-SCCH Part 1 message (see paragraphs 0006, 0007, 0010 – 0013, 0017, 0032 – 0038, see "XOR" commonly used to correlate a received signal in CDMA – paragraphs 0039 – 0040 and **especially** block 209 in prior art figure 2 wherein paragraph 0043 clearly admits decision block 209 in already known to correlate the received HS – SCCH Part 1 information (i.e. multi-part message)); and

logic that selects as a decoded value that one of the reduced set of possible codewords that is associated with a highest one of the correlation values, wherein the reduced set of possible codewords is generated from the full set of possible codewords (see paragraphs 0010-0013, 101, 104 wherein certain UEs can handle on one type of

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modulation schema and if fast-link standards are employed, then UE can adapt to fast rate 16-QAM or use lower rate QPSK when experiencing fading conditions wherein 16-QAM and QPSK are a full set).

Regarding claim 19. Method claim 19 is rejected for the same reasons as apparatus claim 40 listed above since the recited apparatus would perform the claimed method.

Regarding claim 47. Program claim 47 is rejected for the same reasons as apparatus claim 40 and method claim 19 since the recited apparatus and method would perform the claimed program steps.

Regarding claims 20 and 41. See AAPA paragraphs 0011-0013 wherein the only place something meaningful appears through a text search of Applicants specification is 16-QAM or QPSK.

Regarding claims 21 and 42. AAPA teaches standards are already in place for HS-SCCH Part I messages wherein full or reduced sets having different correlation values (see paragraphs 0010-0013, 101, 104 wherein certain UEs can handle on one type of modulation schema and if fast-link standards are employed, then UE can adapt to fast rate 16-QAM or use lower rate QPSK when experiencing fading conditions).

5. Claims 1-3, 5-18, 22-24, 26-39, and 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants Admitted Prior Art (hereinafter AAPA, see

"BACKGROUND", paragraphs 0002 – 0054 and figures 1-4) in view of Strutt (7,072,618).

Regarding claim 1. AAPA discloses a method of determining whether to abort reception of a multi-part message in a code division multiple access communication system, comprising:

receiving a part of the multi-part message (paragraphs 0006, 0007, 0010, 0017, 0020 – 0027, 0029, 0030 – 0041 and prior art figures 1-4);

generating a correlation value by correlating the received part of the multi-part message with a known sequence (paragraphs 0006, 0007, 0017, 0032 – 0038, see "XOR" commonly used to correlate a received signal in CDMA – paragraphs 0039 – 0040 and **especially** block 209 in prior art figure 2 wherein paragraph 0043 clearly admits decision block 209 is already known to correlate the received HS – SCCH Part 1 information (i.e. multi-part message));

comparing the correlation value with a threshold level; and

aborting reception of the multi-part message if the correlation value is less than a threshold level (see paragraphs 0032 – 0033, 0042 wherein if correlation is for that particular MS then process will continue else there is no point in taking further steps to receive this HS-SCCH and process is **aborted**).

It appears from comparing Prior Art figure 2 and figure 5 that AAPA does not use threshold to compare correlation value blocks (see the only difference between figures 2 and 5 is using threshold blocks 513, 525 and 531 in figure 5).

Strutt also teaches in the Code Division Multiple Access environment (col. 1 line 40 – col. 3 line 17) and offers an adaptive threshold selection for detection of a signal in the presence of noise (title, abstract) and reduces the number of false alarms by correlating the received signal and compares to threshold to determine whether the received signal includes a valid data signal or just noise (col. 3 lines 32-55) wherein the comparison circuit outputs a detection signal indicating detection of data signal in the received signal when the correlated value is at least equal to the threshold and outputs a non-detection signal indicating non-detection of the data signal when the level is less than the threshold value. Strutt inventions adaptively detects noise and adjusts the threshold accordingly (col. 5 lines 4-67) and is well suited for CDMA systems wherein interference from other MS using different spreading codes can be characterized by its high correlation noise and can reduce overall complexity of the system by implementing the circuit (120 in figure 4) in a single application specific integrated circuit (col. 6 lines 22-56).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify AAPA (UE equipment) to include the ASIC circuit (i.e. 120 figure 4) as taught by Strutt so that the UE can determine if the signal is directed to it or the signal is just noise and not process the noise signal while reducing the overall size of the UE as taught by Strutt (col. 6 lines 29-33).



Regarding claim 22. AAPA discloses an apparatus that determines whether to abort reception of a multi-part message in a code division multiple access communication system, the apparatus comprising:

logic that receives a part of the multi-part message (paragraphs 0006, 0007, 0010, 0017, 0020 – 0027, 0029, 0030 – 0041 and prior art figures 1-4);

logic that generates a correlation value by correlating the received part of the multi-part message with a known sequence (paragraphs 0006, 0007, 0017, 0032 – 0038, see “XOR” commonly used to correlate a received signal in CDMA – paragraphs 0039 – 0040 and **especially** block 209 in prior art figure 2 wherein paragraph 0043 clearly admits decision block 209 in already known to correlate the received HS – SCCH Part 1 information (i.e. multi-part message));

logic that compares the correlation value with a threshold level; and

logic that aborts reception of the multi-part message if the correlation value is less than a threshold level. (see paragraphs 0032 – 0033, 0042 wherein if correlation is for that particular MS then process will continue else there is no point in taking further steps to receive this HS-SCCH and process is **aborted**).

It appears from comparing Prior Art figure 2 and figure 5 that AAPA does not use threshold to compare correlation value blocks (see the only difference between figures 2 and 5 is using threshold blocks 513, 525 and 531 in figure 5).

Strutt also teaches in the Code Division Multiple Access environment (col. 1 line 40 – col. 3 line 17) and offers an adaptive threshold selection for detection of a signal in the presence of noise (title, abstract) and reduces the number of false alarms by

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correlating the received signal and compares to threshold to determine whether the received signal includes a valid data signal or just noise (col. 3 lines 32-55) wherein the comparison circuit outputs a detection signal indicating detection of data signal in the received signal when the correlated value is at least equal to the threshold and outputs a non-detection signal indicating non-detection of the data signal when the level is less than the threshold value. Strutt inventions adaptively detects noise and adjusts the threshold accordingly (col. 5 lines 4-67) and is well suited for CDMA systems wherein interference from other MS using different spreading codes can be characterized by its high correlation noise and can reduce overall complexity of the system by implementing the circuit (120 in figure 4) in a single application specific integrated circuit (col. 6 lines 22-56).

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify AAPA (UE equipment) to include the ASIC circuit (i.e. 120 figure 4) as taught by Strutt so that the UE can determine if the signal is directed to it or the signal is just noise and not process the noise signal while reducing the overall size of the UE as taught by Strutt (col. 6 lines 29-33).

Regarding claim 43. Program claim 43 is rejected for the same reasons as apparatus claim 22 and method claim 1 since the recited apparatus and method would perform the claimed program steps.

Regarding claims 2 and 23. AAPA admit the code recited in claim 2 is located in the Background section (see paragraph 0079 wherein Applicants admit that code for calculating **variance** (i.e. the recited limitation appearing in claim 2) can be found in the Background section).

Regarding claim 3. Claim 3 is directed towards a code for standard deviation. The Examiner notes the only difference between the code recited in claim 2 and the code recited in claim 3 is changing the word "variance" appearing in claim 2 to "standard deviation" recited in claim 3. However, the Examiner notes that variance means standard deviation and does not constitute novel subject matter.

Regarding claims 5, 26 and 44. Strutt teaches dynamically adjusting the threshold (title).

Regarding claim 6-8, 27-29 and 45-46. Strutt teaches determining if signal is directed to a particular UE (see figure 3 wherein UEs (i.e. 102,106 or 107) can determine if the signal is directed to it --- col. 5 lines 36-40).

Regarding claims 9 and 30. Strutt teaches dynamically adjusting threshold based on traffic behavior (col. 5 line 63-67).

Regarding claims 10-12 and 31-33. AAPA admit that any one of a plurality of possible threshold levels may be used (see paragraph 0011 wherein higher level is ensured (i.e. 16-QAM) and reverts to robust QPSK when UE has traffic directed towards it during less favorable channel conditions).

Regarding claims 13 and 34. Strutt teaches intermediate threshold (col. 6 line 47).

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Regarding claims 14-16, 18, 35-37 and 39. AAPA teaches standards are already in place for HS-SCCH Part I messages wherein full or reduced sets having different correlation values (see paragraphs 0010-0013, 101, 104 wherein certain UEs can handle on one type of modulation schema and if fast-link standards are employed, then UE can adapt to fast rate 16-QAM or use lower rate QPSK when experiencing fading conditions).

Regarding claims 17 and 38. See AAPA paragraphs 0011-0013 wherein the only place something meaningful appears through a text search of Applicants specification is 16-QAM or QPSK.

Regarding claim 24. Claim 24 is directed towards a code for standard deviation. The Examiner notes the only difference between the code recited in claim 23 and the code recited in claim 24 is changing the word "variance" appearing in claim 23 to "standard deviation" recited in claim 24. However, the Examiner notes that variance means standard deviation and does not constitute novel subject matter.

6. Claims 4 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants Admitted Prior Art (hereinafter AAPA, see "BACKGROUND", paragraphs 0002 – 0054 and figures 1-4) in view of Strutt (7,072,618) further in view of Nakamura (7,020,183).

Regarding claims 4 and 25. AAPA in view of Strutt do not explicitly show using ratio.

Nakamura also teaches in the CDMA environment (title, abstract) and compares a correlation value to threshold to see if threshold is exceeded and outputs a control signal STP (col. 6 lines 15-29, col. 11 lines 21-36) to indicate noise is large thereby halting the passage of the received signal (col. 6 line 58 – col. 7 line 5, col. 8 lines 2-13) and based upon this information, the channel decoder can judge that the reliability of the symbol is low and execute error-correction processing thereby improving the quality of signal received (col. 7 lines 2-5). Nakamura also teaches that a ratio may be used and compared to the threshold as well (col. 14 lines 51-55) and if the ratio is less than the threshold, the comparator produces a control signal to block passage of the signal. Nakamura teaches that is ratio takes on a large value, the channel decoder can judge that the reliability of the symbol is low and execute error-correction (col. 15 lines 13-25), as a result of which reception quality can be improved.

It would have been obvious for any one of ordinary skill in the art at the time of invention to modify AAPA in view of Strutt to compare a ratio as taught by Nakamura so that the UE can determine if the signal is directed towards it or if the signal is of low reliability and if so execute an error-correction thereby improving reception quality as taught by Nakamura.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

---(2004/0022177) Awad et al teaches using full set or reduced set of modulation schemes (see title, abstract, paragraph 0009 – 0018, 0025 – 0026, 0029, 0030 – 0049, 0068 – 0076) wherein 16-QAM, 64-QAM or QPSK modulation scheme is selected based on comparing a received message to a threshold or ratio so as to provide the most efficient level of service to each UE. Thus, UEs that have better channels or are located closer to BS can employ higher levels of Modulation-and-coding scheme (paragraphs 0012 and 0018).

---(2006/0036434) May et al also teaches in the CDMA environment wherein received signal is compared to threshold to determine modulation rate to be applied (paragraphs 0005, 0009, 0025, 0036 - 0037 ) to allow for dynamic adjustments thus optimizing system performance. May et al even discloses a subset (i.e. reduced set) may be used (paragraphs 0038, 0040, **especially** claims 6 and 8 on page 5).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry W. Taylor, telephone number (571) 272-7509, who is available Monday-Thursday, 6:30am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost, can be reached at (571) 272-7872. The central facsimile phone number for this group is **571-273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 2600 receptionist whose telephone number is (571) 272-2600, the 2600 Customer Service telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Building, 401 Dulany Street, Alexandria, VA 22314), and facsimile transmissions must be sent to the central fax number (571-273-8300).

Barry W. Taylor  
Art Unit 2617

 2/23/07

**BARRY TAYLOR**  
**PRIMARY EXAMINER**